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REMARKS

Claims 1-20 are pending in the application.

Claims 1-3, 7-9 and 14-18 stand rejected on prior art grounds. Claims 1, 7, 14 and 17 have been amended to clarify that the blazed grating projects a single beam. Support for a single beam is provided in the specification at page 13, lines 11-19. Claims 2, 8 and 15 have been canceled without prejudice or disclaimer of subject matter.

Claims 4-6, 10-13, 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Accordingly, claims 4, 10, 12, 13, 19 and 20 have been rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Thus, Applicants respectfully submit that claims 4-6, 10-13, 19 and 20 are in condition for allowance.

Reconsideration of the Examiner's decisions is respectfully requested based on the following discussion.

I. The 35 U.S.C. §102(b) rejection of claims 1-2 based on Kirk

Claims 1-2 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kirk (US 6,091,486). Claim 1 has been amended to include the limitations of claim 2, and therefore claim 2 has been canceled, and the rejection of claim 2 has been rendered moot.

The present invention as recited in claim 1 as amended is directed towards a method for measuring lens aberration, the method comprising providing a reticle having a test pattern, the test pattern having a first feature and a second feature, the first feature including a blazed grating capable of forming an asymmetric pattern of illumination energy passing therethrough, the asymmetric pattern rotationally oriented in

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a first direction; exposing a photosensitive material to illumination energy passing through the first and second features, wherein the blazed grating projects a single beam, to form a first feature image and a second feature image, respectively; measuring a relative location of the first feature image with respect to the second feature image; and computing a lens aberration parameter in accordance with said relative location. A salient feature of the invention recited in claim 1 is that the blazed grating is configured to project a single beam, that is, a single diffracted order, (page 13, lines 11-19) which has the advantage that specific regions of the lens pupil may be tested.

The Office Action alleges that Kirk discloses exposing, wherein said blazed grating projects a single beam, citing col. 6-7, lines 50-20. Applicants respectfully disagree. The discussion at col. 6-7, lines 50-20 refers to FIG. 6 and describes the light reflected from the resist relief (col. 6, lines 52 and 62), and fails to disclose a single beam projected through or from the blazed grating. Kirk discloses diffraction components from a blazed grating including central and first order diffraction components (col. 4, lines 12-26), but fails to disclose a single beam projected from the blazed grating.

Thus, Applicants submit that Kirk fails to teach each and every aspect of claim 1 and therefore claim 1 is patentable over Kirk. Applicants therefore respectfully request that this rejection be reconsidered and withdrawn.

II. The 35 U.S.C. §103(a) rejection of claim 3 based on Kirk and Kouno et al.

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kirk (US 6,091,486) and Kouno et al. (US 6,437,858).

As discussed above, Kirk fails to teach each and every aspect of claim 1. Claim 3 depends from claim 1.

As understood, Kouno et al. discloses a box-in-box pattern for aberration

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measurement. However, Kouno et al. fails to overcome the deficiencies of Kirk, and in particular fails to teach or suggest a blazed grating capable of projecting a single beam.

Thus, there would be no motivation to combine the teachings or suggestions of Kirk and Kuono et al. to arrive at the present invention, and Applicants submit that Kirk and Kuono et al., individually or in combination, fail to teach or suggest all the essential elements of claim 3.

Applicants therefore respectfully request that this rejection be reconsidered and withdrawn.

III. The 35 U.S.C. §102(b) rejection of claims 7-8 based on Kirk.

Claims 7-8 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kirk (US 6,091,486). Claim 7 has been amended to include the limitations of claim 8, and claim 8 has been canceled rendering the rejection of claim 8 moot.

The present invention of claim 7 is directed towards a method of measuring lens aberration including, among other things, providing a reticle having a plurality of test patterns, including first and second features, wherein each of said first features have a blazed grating, and exposing a photosensitive material through the plurality of test patterns wherein each of the blazed gratings projects a single beam.

As discussed above, Kirk fails to teach or suggest a blazed grating that projects a single beam.

Thus, Applicants submit that Kirk fails to teach each and every aspect of claim 7 and therefore claim 7 is patentable over Kirk. Applicants therefore respectfully request that this rejection be reconsidered and withdrawn.

IV. The 35 U.S.C. §103(a) rejection of claim 9 based on Kirk and Kouno et al.

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpat ntable over

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Kirk (US 6,091,486) and Kouno et al. (US 6,437,858).

As discussed above, Kirk fails to teach each and every aspect of claim 7, and in particular fails to teach or suggest a blazed grating that projects a single beam. Claim 9 depends from claim 7.

As discussed above, Kouno et al. fails to overcome the deficiencies of Kirk, and in particular fails to teach or suggest a blazed grating that projects a single beam.

Thus, there would be no motivation to combine the teachings or suggestions of Kirk and Kuono et al. to arrive at the present invention, and Applicants submit that Kirk and Kuono et al., individually or in combination, fail to teach or suggest all the essential elements of claim 9.

Applicants therefore respectfully request that this rejection be reconsidered and withdrawn.

V. The 35 U.S.C. §102(b) rejection of claims 14-15 based on Kirk.

Claims 14-15 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kirk (US 6,091,486). Claim 14 has been amended to include the limitations of claim 15, and therefore claim 15 has been canceled, rendering the rejection of claim 15 moot.

Kirk fails to teach or suggest a blazed grating capable of projecting a single beam.

Thus, Applicants submit that Kirk fails to teach each and every aspect of claim 14 and therefore claim 14 is patentable over Kirk. Applicants therefore respectfully request that this rejection be reconsidered and withdrawn.

VI. The 35 U.S.C. §103(a) rejection of claim 16 based on Kirk and Kouno et al.

Claim 16 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kirk (US 6,091,486) and Kouno et al. (US 6,437,858).

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As discussed above, Kirk fails to teach each and every aspect of claim 14, and in particular fails to teach or suggest a blazed grating capable of projecting a single beam. Claim 16 depends from claim 14.

As discussed above, Kouno et al. fails to overcome the deficiencies of Kirk, and in particular fails to teach or suggest a blazed grating capable of projecting a single beam.

Thus, there would be no motivation to combine the teachings or suggestions of Kirk and Kuono et al. to arrive at the present invention, and Applicants submit that Kirk and Kuono et al., individually or in combination, fail to teach or suggest all the essential elements of claim 16.

Applicants therefore respectfully request that this rejection be reconsidered and withdrawn.

VII. The 35 U.S.C. §102(b) rejection of claim 17 based on Kirk.

Claim 17 stands rejected under 35 U.S.C. §102(b) as being anticipated by Kirk (US 6,091,486).

As discussed above, Kirk fails to disclose a blazed grating capable of projecting a single beam.

Thus, Applicants submit that Kirk fails to teach each and every aspect of claim 17 and therefore claim 17 is patentable over Kirk. Applicants therefore respectfully request that this rejection be reconsidered and withdrawn.

VIII. The 35 U.S.C. §103(a) rejection of claim 18 based on Kirk and Kouno et al.

Claim 18 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kirk (US 6,091,486) and Kouno et al. (US 6,437,858).

As discussed above, Kirk fails to teach each and every aspect of claim 17, and in

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particular fails to teach or suggest a blazed grating capable of projecting a single beam. Claim 18 depends from claim 17.

As discussed above, Kouno et al. fails to overcome the deficiencies of Kirk, and in particular fails to teach or suggest a blazed grating capable of projecting a single beam.

Thus, there would be no motivation to combine the teachings or suggestions of Kirk and Kuono et al. to arrive at the present invention, and Applicants submit that Kirk and Kuono et al., individually or in combination, fail to teach or suggest all the essential elements of claim 18.

Applicants therefore respectfully request that this rejection be reconsidered and withdrawn.

IX. Allowable Subject Matter

Claims 4, 10, 19 and 20 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants therefore respectfully submit that claims 4-6, 10-13, 19 and 20 are in condition for allowance.

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CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that claims 1, 3-7, 9-14 and 16-20 are in condition for allowance, and request favorable consideration and early passage to issue of the present application. Applicants' undersigned attorney may be reached by telephone at (845) 894-6919. All correspondence should continue to be directed to the address listed below.

Respectfully Submitted,

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